SEQUENCE LISTING

<110> Krieg, Arthur
      Klinman, Dennis
      Steinberg, Alfred

<120> Methods and Products for Treating HIV Infection

<130> C1039.70084US00

<140> not assigned
<141> 2003-08-25

<150> US 09/931,583
<151> 2001-08-16

<150> US 08/276,358
<151> 1994-07-15

<150> US 09/415,142
<151> 1999-10-09

<160> 74

<170> PatentIn version 3.0

<210> 1
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 1
ggggtcaacg ttcaggggggg   20

<210> 2
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 2
gctagacgtt agcgt   15

<210> 3
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 3
gctagatgtt agcgt   15

<210> 4
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<220>
<221> modified_base
<222> (7)..(7)
<223> m5c

<400> 4
gctagangtt agcgt   15

<210> 5
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<220>
<221> modified_base
<222> (13)..(13)
<223> m5c

<400> 5
gctagacgtt agngt   15

<210> 6
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 6
gcatgacgtt gagct   15

<210> 7

2

```
<211>   20
<212>   DNA
<213>   Artificial Sequence
<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   7
atggaaggtc cagcgttctc                                                    20


<210>   8
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   8
atcgactctc gagcgttctc                                                    20


<210>   9
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<220>
<221>   modified_base
<222>   (3)..(3)
<223>   m5c

<220>
<221>   modified_base
<222>   (10)..(10)
<223>   m5c

<220>
<221>   modified_base
<222>   (14)..(14)
<223>   m5c

<400>   9
atngactctn gagngttctc                                                    20


<210>   10
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
```

```
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  modified_base
<222>  (3)..(3)
<223>  m5c

<400>  10
atngactctc gagcgttctc                                              20


<210>  11
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  modified_base
<222>  (18)..(18)
<223>  m5c

<400>  11
atcgactctc gagcgttntc                                              20


<210>  12
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  12
atggaaggtc caacgttctc                                              20


<210>  13
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  13
gagaacgctg gaccttccat                                              20


<210>  14
```

4

```
<211>   20
<212>   DNA
<213>   Artificial Sequence


<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   14
gagaacgctc gaccttccat                                                    20


<210>   15
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   15
gagaacgctc gaccttcgat                                                    20


<210>   16
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   16
gagcaagctg gaccttccat                                                    20


<210>   17
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<220>
<221>   modified_base
<222>   (6)..(6)
<223>   m5c

<400>   17
gagaangctg gaccttccat                                                    20
```

```
<210>  18
<211>  20
<212>  DNA
<213>  Artificial Sequence


<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  modified_base
<222>  (14)..(14)
<223>  m5c

<400>  18
gagaacgctg gacnttccat                                              20


<210>  19
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  19
gagaacgatg gaccttccat                                              20


<210>  20
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  20
gagaacgctc cagcactgat                                              20


<210>  21
<211>  20
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  21
tccatgtcgg tcctgatgct                                              20
```

```
<210>  22
<211>  20
<212>  DNA
<213>  Artificial Sequence


<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  22
tccatgctgg tcctgatgct                                                    20


<210>  23
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide


<220>
<221>  modified_base
<222>  (8)..(8)
<223>  m5c

<400>  23
tccatgtngg tcctgatgct                                                    20


<210>  24
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  modified_base
<222>  (12)..(12)
<223>  m5c

<400>  24
tccatgtcgg tnctgatgct                                                    20


<210>  25
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature
```

7

```
<223>   Synthetic Oligonucleotide

<400>   25
tccatgacgt tcctgatgct                                        20



<210>   26
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   26
tccatgtcgg tcctgctgat                                        20



<210>   27
<211>   11
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature


<220>
<221>   misc_feature
<222>   (3)..(3)
<223>   n = 0 to 25 nucleotides

<220>
<221>   misc_feature
<222>   (5)..(5)
<223>   n = 0 to 25 nucleotides

<220>
<221>   Unsure
<222>   (3)..(3)
<223>   n = a, c, g, t/u

<220>
<221>   Unsure
<222>   (5)..(7)
<223>   n = a, c, g, t/u

<220>
<221>   Unsure
<222>   (10)..(11)
<223>   n = a, c, g, t/u

<400>   27
tcntnnncgn n                                                 11



<210>   28
```

```
<211>  10
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide
<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  n = 0 to 26 nucleotides

<220>
<221>  Unsure
<222>  (3)..(3)
<223>  n = a, c, g, or t/u

<220>
<221>  Unsure
<222>  (5)..(6)
<223>  n = a, c, g, or t/u

<220>
<221>  Unsure
<222>  (9)..(10)
<223>  n = a, c, g, or t/u

<400>  28
tcntnngcnn                                                        10


<210>  29
<211>  24
<212>  DNA
<213>  Artificial Sequence

<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  29

tcgtcgtttt gtcgttttgt cgtt                                        24


<210>  30
<211>  19
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  30
ggggacgtcg acgtggggg                                              19


<210>  31
```

```
<211>    11
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<220>
<221>    misc_feature
<222>    (3)..(3)
<223>    n = 0 through 25 nucleotides.

<220>
<221>    misc_feature
<222>    (5)..(5)
<223>    n = 0 through 25 nucleotides.

<220>
<221>    Unsure
<222>    (3)..(3)
<223>    n = a, c, g, or t/u.

<220>
<221>    Unsure
<222>    (5)..(7)
<223>    n = a, c, g, or t/u.

<400>    31
tcntnnncgt t                                                          11


<210>    32
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<220>
<221>    misc_feature
<222>    (3)..(3)
<223>    n = 0 through 26 nucleotides.

<220>
<221>    misc_feature
<222>    (5)..(5)
<223>    n = 0 through 26 nucleotides.

<220>
<221>    misc_feature
<222>    (12)..(12)
<223>    n = 0 through 26 nucleotides.

<220>
<221>    Unsure
<222>    (12)..(14)
```

```
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (5)..(7)
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (3)..(3)

<223>  n = a, c, g, or t/u.

<400>  32
tcntnnncgt tnnncgtt                                                    18


<210>  33
<211>  25
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  misc_feature
<222>  (3)..(3)
<223>  n  = 0 through 26 nucleotides.

<220>
<221>  misc_feature
<222>  (5)..(5)
<223>  n  = 0 through 26 nucleotides.

<220>
<221>  misc_feature
<222>  (12)..(12)
<223>  n  = 0 through 26 nucleotides.

<220>
<221>  misc_feature
<222>  (19)..(19)
<223>  n  = 0 through 26 nucleotides.

<220>
<221>  Unsure
<222>  (3)..(3)
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (5)..(7)
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (12)..(14)
<223>  n = a, c, g, or t/u.
```

```
<220>
<221>  Unsure
<222>  (19)..(21)
<223>  n = a, c, g, or t/u.

<400>  33
tcntnnncgt tnnncgttnn ncgtt                                    25


<210>  34
<211>  20
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  misc_feature
<222>  (7)..(7)
<223>  n = 0 through 26 nucleotides.

<220>
<221>  misc_feature
<222>  (14)..(14)
<223>  n = 0 through 26 nucleotides.

<220>
<221>  Unsure
<222>  (7)..(7)
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (14)..(14)

<223>  n = a, c, g, or t/u.

<400>  34
gtcgttngtc gttngtcgtt                                          20


<210>  35
<211>  27
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<400>  35
tcgtcgtttt gtcgttttgt cgttttt                                 27


<210>  36
<211>  27
```

```
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    36
tcgtcgtttt gtcgttttgt cgttccc                                        27


<210>    37
<211>    27
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    37
tcgtcgtttt gtcgttttgt cgttaaa                                        27


<210>    38
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    38
tcgtcgtttt gtcgttttgt cgtt                                           24


<210>    39
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    39
atcgactctc gagcgttctc                                                20


<210>    40
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature
```

```
<223>   Synthetic Oligonucleotide

<220>
<221>   modified_base
<222>   (18)..(18)

<400>   40
atcgactctc gagcgttntc                                        20


<210>   41
<211>   20
<212>   DNA
<213>   Artificial Sequence
<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   41
tccacgacgt tttcgacgtt                                        20


<210>   42
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   42
tccataacgt tcctgatgct                                        20


<210>   43
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   43
tccatagcgt tcctagcgtt                                        20


<210>   44
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide
```

14

```
<400>   44
tccatcacgt gcctgatgct                                              20


<210>   45
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide


<400>   45
tccatgacgg tcctgatgct                                              20


<210>   46
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   46
tccatgacgt ccctgatgct                                              20


<210>   47
<211>   20
<212>   DNA
<213>   Artificial Sequence


<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   47
tccatgacgt tcctgacgtt                                              20


<210>   48
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   48
```

```
tccatgacgt tcctgatgct                                          20


<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 49
tccatgccgg tcctgatgct                                          20


<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 50
tccatgcgtt gcgttgcgtt                                          20


<210> 51
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 51
tccatggcgg tcctgatgct                                          20


<210> 52
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 52
tccatgtcga tcctgatgct                                          20


<210> 53
<211> 20
```

16

```
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   53
tccatgtcgc tcctgatgct                                              20


<210>   54
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   54
tccatgtcgg tcctgatgct                                              20


<210>   55
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   55
tccatgtcgg tcctgctgat                                              20


<210>   56
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<220>
<221>   modified_base
<222>   (12)..(12)
<223>   n = m5c

<400>   56
tccatgtcgg tnctgatgct                                              20


<210>   57
<211>   20
```

17

```
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   57
tccatgtcgt tcctgatgct                                                20


<210>   58
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide
<400>   58
tccatgtcgt tcctgtcgtt                                                20


<210>   59
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   59
tcctgacgtt cctgacgtt                                                 19


<210>   60
<211>   19
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   60
tcctgtcgtt cctgtcgtt                                                 19


<210>   61
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature
```

18

```
<223>   Synthetic Oligonucleotide

<400>   61
tcctgtcgtt ccttgtcgtt                                                20


<210>   62
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   62
tcctgtcgtt ttttgtcgtt                                                20


<210>   63
<211>   20
<212>   DNA
<213>   Artificial Sequence


<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   63
tccttgtcgt tcctgtcgtt                                                20


<210>   64
<211>   21
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   64
tcgtcgctgt tgtcgtttct t                                              21


<210>   65
<211>   14
<212>   DNA

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   65
tcgtcgtcgt cgtt                                                      14
```

```
<210>    66
<211>    20
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    66
tcgtcgttgt cgttgtcgtt                                          20


<210>    67
<211>    22
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    67
tcgtcgttgt cgttttgtcg tt                                       22


<210>    68
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    68
tctcccagcg cgcgccat                                            18


<210>    69
<211>    13
<212>    DNA
<213>    Artificial Sequence

<220>
<221>    misc_feature

<223>    Synthetic Oligonucleotide

<400>    69
tgtcgttgtc gtt                                                 13


<210>    70
<211>    19
<212>    DNA
```

<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   70
tgtcgttgtc gttgtcgtt   19

<210>   71
<211>   25
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   71
tgtcgttgtc gttgtcgttg tcgtt   25

<210>   72
<211>   21

<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<400>   72
tgtcgtttgt cgtttgtcgt t   21

<210>   73
<211>   10
<212>   DNA
<213>   Artificial Sequence

<220>
<221>   misc_feature

<223>   Synthetic Oligonucleotide

<220>
<221>   misc_feature
<222>   (1)..(1)
<223>   n = 1 through 8 nucleotides.

<220>
<221>   Unsure
<222>   (1)..(4)
<223>   n = a, c, g, or t/u.

21

```
<220>
<221>  Unsure
<222>  (7)..(10)
<223>  n = a, c, g, or t/u.

<220>
<221>  misc_feature
<222>  (2)..(2)
<223>  n = 1 through 20 nucleotides.

<220>
<221>  misc_feature
<222>  (8)..(8)
<223>  n = 1 through 20 nucleotides.
<220>
<221>  misc_feature
<222>  (9)..(9)
<223>  n = 3 through 20 nucleotides.

<400>  73
nnnncgnnnn                                                     10


<210>  74
<211>  8
<212>  DNA
<213>  Artificial Sequence

<220>
<221>  misc_feature

<223>  Synthetic Oligonucleotide

<220>
<221>  misc_feature
<222>  (1)..(1)
<223>  n = 0 through 20 nucleotides.

<220>
<221>  misc_feature
<222>  (8)..(8)
<223>  n = 0 through 20 nucleotides.

<220>
<221>  Unsure
<222>  (1)..(3)
<223>  n = a, c, g, or t/u.

<220>
<221>  Unsure
<222>  (6)..(8)
<223>  n = a, c, g, or t/u.

<400>  74
nnncgnnn                                                        8
```

22